# UNITED STATES PATENT AND TRADEMARK OFFICE

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| 09/940,100 | 08/27/2001 | Charles A. Peters | 3165-000121 | 4277 |

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| EXAMINER |
|---|
| SALL, EL HADJI MALICK |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2157 | |

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | Application No. | Applicant(s) |
| --- | --- | --- |
| **Office Action Summary** | 09/940,100 | PETERS, CHARLES A. |
| | Examiner | Art Unit | |
| | El Hadji M Sall | 2157 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>27 August 2001</u>.

2a)☐ This action is **FINAL**.  2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-24</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-24</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

1.                                  **DETAILED ACTION**


This action is responsive to the application filed on August 27, 2001. Claims 1-24

are pending. Claims 1-24 represent Internet based system designer with live agent

assist.


2.                          ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out

and distinctly claiming the subject matter, which the applicant regards as his

invention.


Claims 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. One lines 4-6, applicant claims a common reference frame in

communication with said configuration tool, whereby a user of the configurator tool and

a live agent simultaneously view at least one common page. Examiner is not sure

whether applicant means both the user and the live agent are in the same location or

different location. Further clarification is needed.


3.                          ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed
or described as set forth in section 102 of this title, if the differences between the
subject matter sought to be patented and the prior art are such that the subject
matter as a whole would have been obvious at the time the invention was made
to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was
made.

**4.**     Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. U.S. 6,263,358.

Lee teaches the invention substantially as claimed including scheduler for a software system having means for allocating tasks.

As to claim 1, Lee teaches a system comprising:

a configurator tool providing a range of relationships for correlating selections within a scope of a configuration (figure 6; column 5, lines 59, Lee discloses a library of predefined organizational relationships; columns17-18, lines 66-67 and 1, Lee discloses The Shop 1 Table introduces the four organizational relationships used in the current implementation of the CABS system; column 36, lines 41-43, Lee discloses the society tool allows a user to select a set of agents and view (a) the structural organizational relationships);

a common reference frame in communication with said configurator tool, whereby a user of the configurator tool and a live agent simultaneously view at least one common page (figure 14; column 9, lines 53-56, Lee discloses A particularly important feature of the CABS agent is that its co-ordination engine 210 can implement more than one co-ordination process, and therefore more than one coordination protocol, simultaneously; column 6, lines 54-59, Lee discloses the agents 105, 110, 115, 120 will have access to common resources within the CABS agent system 100, including for instance the infrastructure agents mentioned above; a name server agent 135, a debugging/fault finding agent 140, referred to here as a visualiser, and a facilitator agent 145; column 6, lines 65-67, Lee discloses that circumstance that the CABS agents 105, 110, 115, 120 will need to share a common communication language with the separate agent X 180),

wherein the live agent assists the user (column 36, lines 18-27, Lee discloses Use of any of the tools in the suite requires that once the tool is launched users

connect to one or more nameservers. In a multi-agent system environment, nameservers contain the names and addresses of all "live" agents in the environment. Thus, connecting to a nameserver involves sending a request to the nameserver to list all agents in the environment and any agents, which later come online. In an environment with many nameservers, the user can select which to connect to, effectively filtering the visualisation effort to a subset of agents of interest).

Lee fails to teach an Internet based system designer.

However, "official notice" is taken that the concept and advantages of an Internet based system designer is old and well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lee by specifying an Internet based system designer. One would be motivated to do so to allow communication beyond local area network.

As to claim 2, Lee teaches the system designer of claim 1, wherein the configurator tool comprises an expert system and the live agent assists the user by helping the user to perform at least one of navigation of the expert system and use of the expert system (column 25, lines 59-65, Lee discloses The user input at this stage will simply be a list of agent identifiers, representing the set of candidate agents selected by the domain expert as likely to provide a reasonable model of, and therefore workable control structure for, the domain. The CABS system will allocate each of the identifiers a copy of the agent shell 300 and the output of Step 1 is this set of agent shells 300)

As to claim 3, Lee teaches the system designer of claim 1, wherein the user and the live agent establish mutual communication (column 9, lines 45-52, Lee discloses at agent build time, the user selects from a co-ordination graphs database 310 the specific coordination graphs for the agent, which are loaded into the agent's local coordination graph database 255...)

As to claim 4, Lee teaches the system designer of claim 3, wherein the user and the live agent simultaneously view the common page while maintaining mutual communication (figure 14; column 9, lines 53-56, Lee discloses A particularly important feature of the CABS agent is that its co-ordination engine 210 can implement more than one co-ordination process, and therefore more than one coordination protocol, simultaneously)

As to claim 5, Lee teaches the system designer of claim 3, wherein the mutual communication occurs by at least one of telephone, digital video link, digital audio link, online instant messaging system, and internet chat technology (column 33, lines 20-37, lee discloses...Further, for administrative and debugging purposes, it is important that the visualiser function both online and off-line; column 36, lines 18-24, lee discloses...connecting to a nameserver involves sending a request to the nameserver to list all agents in the environment and any agents which later come online)

As to claim 6, Lee discloses the system designer of claim 1, wherein the selections are preselected for configuration (column 3, lines 22-25, Lee discloses a module selects said executable software for use in negotiating with another software module in relation to task allocation, said selection being determined at least in part by said organization data).

As to claim 7, Lee teaches the system designer of claim 1, wherein a relationship within the domain of relationships involves at least in part at least one algorithmic function (column 3, lines 19-21, Lee discloses executable software providing a collaboration or co-ordination strategy, expressed for instance as a rule or algorithm; column 20, lines 25-32, Lee discloses...CABS agents can also allow an optimizing scheduler to be attached to the commitment table. In a simple implementation, a constraint satisfaction algorithm can be used to reschedule already planned activities such that none of the constraints that were imposed during planning is violated; column

38, lines 51-61, Lee discloses Hence, the algorithm of the Reports tool for processing the data (retrieved from all the agents) is as follows:...).

As to claim 8, Lee teaches the system designer of claim 1, wherein the live agent assists the user in modification of at least one of a selection, a relationship, the configuration, the configurator tool, the mutual communication, the common reference frame, and the common page (column 36, lines 18-27, Lee discloses Use of any of the tools in the suite requires that once the tool is launched users connect to one or more nameservers. In a multi-agent system environment, nameservers contain the names and addresses of all "live" agents in the environment. Thus, connecting to a nameserver involves sending a request to the nameserver to list all agents in the environment and any agents, which later come online. In an environment with many nameservers, the user can select which to connect to, effectively filtering the visualisation effort to a subset of agents of interest).

As to claim 9, Lee teaches the system designer of claim 8, wherein the modification of the configuration includes at least one of expansion, limitation, and redefinition of a scope of the configuration (column 39, lines 59-64, Lee discloses The tool also provides the user with facilities for collapsing/expanding sections of the graph and hiding/showing nodes on the graph--this is important in dealing with a very large graph since it allows a user to focus-in on the regions of interest, reducing too much detail which might hinder the debugging effort; column 41, lines 52-58, Lee discloses The control monitor tool is useful in debugging and/or analyzing the behavior of a society of agents by allowing a user to dynamically reconfigure the society and analyze its subsequent behavior. This is useful when testing hypotheses. The user can use it to study the effects of various changes on agents' constitution, organizational relations, co-ordination behavior etc.)

As to claim 10, Lee teaches the system designer of claim 9, wherein the expansion of a scope of the configuration includes live agent assistance with multiple

configurator tools (column 24, lines 38-49, Lee discloses CABS embodies a system of methods plus environment to provide a multi-agent systems developer with the means to: configure a number of different agents of varying functionality and behavior...)

As to claim 11, Lee teaches the system designer of claim 1, wherein the common reference frame permits the live agent to view a user interface that looks the same as the user interface of the user (figure 1; column 1, lines 23-28, Lee discloses In a distributed environment, many such agents may co-operate to co-ordinate and perform the control activities. Typically, such agents form an agent layer, with each agent interfacing with a number of external systems(the domain layer) which they control, monitor or manage, as shown in FIG. 1; figure 3; column 23, lines 39-49, Lee discloses...This provides an agent template 300 which dictates the agent structure shown in fig. 2, a user interface 305 which is primarily a set of editors for identifying a set of agents, selecting agent functionality and inputting task and domain-related data, a library of co-ordination strategies 310 and a set of standard-type, supporting agents 315)

As to claim 12, Lee teaches the system designer of claim 1, wherein the live agent is chosen by an agent selection method comprising:

determining at least one desirable skill required of a live agent (abstract, Lee discloses...agents works together in a domain to provide functionality such as provision of communications services...);

determining an appropriate level of skill required of a live agent (abstract, Lee discloses...a scheduler is built into each collaborative agent which schedules tasks allocated to that particular agent and tasks sub-allocated by that agent...);

evaluating the cost of labor for at least one live agent (column 6, lines 34-44, Lee discloses...The network agents 115, 120 will also need to collaborate with each other, for instance by bidding against one another in terms of cost, time and quality of service to provide the network bandwidth; column 19, lines 2-3, lee discloses cost of performing the task; column 39, lines 21-25, Lee discloses Other attributes of the jobs

might also be shown on the chart, such as when each agent is scheduled to perform its part, their costs, the priority assigned to them by the agents, and the resources they require); and

selecting a live agent based at least in part on the cost of labor for a live agent with the appropriate level of skill regarding the desirable skill (column 8, lines 20-22, Lee discloses the Message Handler 210 to construct a message and dispatch it to selected other agents; column 39, lines 9-25, Lee discloses The reports tool provides a global view of problem solving in a society of agents and is useful both as a debugging and an administrative tool. It allows a user to select a set of agents and request that they report the status of all their jobs to it. Next, the user can select an agent of interest and a job owned by that agent. (An agent owns a job if it is scheduled to perform the job or subpart at a root node in a task decomposition hierarchy for the job.) For the selection of agent and job, the reports tool generates the GANTT chart type graph 700 of FIG. 7 showing the decomposition 560 of the job, the allocation of its constituent subparts to different agents in the community, and the relevant states of the job and subparts. Other attributes of the jobs might also be shown on the chart, such as when each agent is scheduled to perform its part, their costs, the priority assigned to them by the agents, and the resources they require).

As to claim 13, Lee teaches a method of providing live agent assistance, the method comprising:

providing a configurator tool to a user permitting the user to assemble a configuration of selections, wherein the configuration includes at least two selections and a relationship correlating the selections (figure 6; column 5, lines 59, Lee discloses a library of predefined organizational relationships; columns17-18, lines 66-67 and 1, Lee discloses The Shop 1 Table introduces the four organizational relationships used in the current implementation of the CABS system; column 36, lines 41-43, Lee discloses the society tool allows a user to select a set of agents and view (a) the structural organizational relationships);

and establishing a common reference frame between the user and

a live agent, wherein the user and the live agent simultaneously view at least
one common page (figure 14; column 9, lines 53-56, Lee discloses A particularly
important feature of the CABS agent is that its co-ordination engine 210 can implement
more than one co-ordination process, and therefore more than one coordination
protocol, simultaneously; column 6, lines 54-59, Lee discloses the agents 105, 110,
115, 120 will have access to common resources within the CABS agent system 100,
including for instance the infrastructure agents mentioned above; a name server agent
135, a debugging/fault finding agent 140, referred to here as a visualiser, and a
facilitator agent 145; column 6, lines 65-67, Lee discloses that circumstance that the
CABS agents 105, 110, 115, 120 will need to share a common communication
language with the separate agent X 180),

wherein the live agent assists the user (column 36, lines 18-27, Lee discloses
Use of any of the tools in the suite requires that once the tool is launched users
connect to one or more nameservers. In a multi-agent system environment,
nameservers contain the names and addresses of all "live" agents in the environment.
Thus, connecting to a nameserver involves sending a request to the nameserver to list
all agents in the environment and any agents, which later come online. In an
environment with many nameservers, the user can select which to connect to,
effectively filtering the visualisation effort to a subset of agents of interest).

Lee fails to teach an Internet based system designer.

However, "official notice" is taken that the concept and advantages of an Internet
based system designer is old and well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the
invention to modify Lee by specifying an Internet based system designer. One would
be motivated to do so to allow communication beyond local area network.

As to claim 14, Lee teaches the method of claim 13, wherein the configurator tool
comprises an expert system and the live agent assists the user by helping the user to
perform at least one of navigation of the expert system and use of the expert system
(column 25, lines 59-65, Lee discloses The user input at this stage will simply be a list

of agent identifiers, representing the set of candidate agents selected by the domain expert as likely to provide a reasonable model of, and therefore workable control structure for, the domain. The CABS system will allocate each of the identifiers a copy of the agent shell 300 and the output of Step 1 is this set of agent shells 300)

As to claim 15, Lee teaches the method of claim 13, wherein the user and the live agent establish mutual communication (column 9, lines 45-52, Lee discloses at agent build time, the user selects from a co-ordination graphs database 310 the specific coordination graphs for the agent, which are loaded into the agent's local coordination graph database 255...)

As to claim 16, Lee teaches the method of claim 15, wherein the user and the live agent simultaneously view the common page while maintaining mutual communication (figure 14; column 9, lines 53-56, Lee discloses A particularly important feature of the CABS agent is that its co-ordination engine 210 can implement more than one co-ordination process, and therefore more than one coordination protocol, simultaneously)

As to claim 17, Lee teaches the method of claim 15, wherein the mutual communication occurs by at least one of telephone, digital video link, digital audio link, online instant messaging system, and internet chat technology (column 33, lines 20-37, lee discloses...Further, for administrative and debugging purposes, it is important that the visualiser function both online and off-line; column 36, lines 18-24, lee discloses...connecting to a nameserver involves sending a request to the nameserver to list all agents in the environment and any agents which later come online)

As to claim 18, Lee discloses the method of claim 13, wherein the selections are preselected for configuration (column 3, lines 22-25, Lee discloses a module selects said executable software for use in negotiating with another software module in relation

to task allocation, said selection being determined at least in part by said organization data).

As to claim 19, Lee teaches the system designer of claim 13, wherein a relationship within the domain of relationships involves at least in part at least one algorithmic function (column 3, lines 19-21, Lee discloses executable software providing a collaboration or co-ordination strategy, expressed for instance as a rule or algorithm; column 20, lines 25-32, Lee discloses... CABS agents can also allow an optimizing scheduler to be attached to the commitment table. In a simple implementation, a constraint satisfaction algorithm can be used to reschedule already planned activities such that none of the constraints that were imposed during planning is violated; column 38, lines 51-61, Lee discloses Hence, the algorithm of the Reports tool for processing the data (retrieved from all the agents) is as follows:...).

As to claim 20, Lee teaches the method of claim 13, wherein the live agent assists the user in modification of at least one of a selection, a relationship, the configuration, the configurator tool, the mutual communication, the common reference frame, and the common page (column 36, lines 18-27, Lee discloses Use of any of the tools in the suite requires that once the tool is launched users connect to one or more nameservers. In a multi-agent system environment, nameservers contain the names and addresses of all "live" agents in the environment. Thus, connecting to a nameserver involves sending a request to the nameserver to list all agents in the environment and any agents, which later come online. In an environment with many nameservers, the user can select which to connect to, effectively filtering the visualisation effort to a subset of agents of interest).

As to claim 21, Lee teaches the method of claim 20, wherein the modification of the configuration includes at least one of expansion, limitation, and redefinition of a scope of the configuration (column 39, lines 59-64, Lee discloses The tool also provides the user with facilities for collapsing/expanding sections of the graph and

hiding/showing nodes on the graph--this is important in dealing with a very large graph since it allows a user to focus-in on the regions of interest, reducing too much detail which might hinder the debugging effort; column 41, lines 52-58, Lee discloses The control monitor tool is useful in debugging and/or analyzing the behavior of a society of agents by allowing a user to dynamically reconfigure the society and analyze its subsequent behavior. This is useful when testing hypotheses. The user can use it to study the effects of various changes on agents' constitution, organizational relations, co-ordination behavior etc.)

As to claim 22, Lee teaches the method of claim 21, wherein the expansion of a scope of the configuration includes live agent assistance with multiple configurator tools (column 24, lines 38-49, Lee discloses CABS embodies a system of methods plus environment to provide a multi-agent systems developer with the means to: configure a number of different agents of varying functionality and behavior...)

As to claim 23, Lee teaches the method of claim 13, wherein the common reference frame permits the live agent to view a user interface that looks the same as the user interface of the user (figure 1; column 1, lines 23-28, Lee discloses In a distributed environment, many such agents may co-operate to co-ordinate and perform the control activities. Typically, such agents form an agent layer, with each agent interfacing with a number of external systems(the domain layer) which they control, monitor or manage, as shown in FIG. 1; figure 3; column 23, lines 39-49, Lee discloses...This provides an agent template 300 which dictates the agent structure shown in fig. 2, a user interface 305 which is primarily a set of editors for identifying a set of agents, selecting agent functionality and inputting task and domain-related data, a library of co-ordination strategies 310 and a set of standard-type, supporting agents 315)

As to claim 24, Lee teaches the method of claim 13, wherein the live agent is chosen by an agent selection method comprising:

determining at least one desirable skill required of a live agent (abstract, Lee discloses...agents works together in a domain to provide functionality such as provision of communications services...);

determining an appropriate level of skill required of a live agent (abstract, Lee discloses...a scheduler is built into each collaborative agent which schedules tasks allocated to that particular agent and tasks sub-allocated by that agent...);

evaluating the cost of labor for at least one live agent (column 6, lines 34-44, Lee discloses...The network agents 115, 120 will also need to collaborate with each other, for instance by bidding against one another in terms of cost, time and quality of service to provide the network bandwidth; column 19, lines 2-3, lee discloses cost of performing the task; column 39, lines 21-25, Lee discloses Other attributes of the jobs might also be shown on the chart, such as when each agent is scheduled to perform its part, their costs, the priority assigned to them by the agents, and the resources they require); and

selecting a live agent based at least in part on the cost of labor for a live agent with the appropriate level of skill regarding the desirable skill (column 8, lines 20-22, Lee discloses the Message Handler 210 to construct a message and dispatch it to selected other agents; column 39, lines 9-25, Lee discloses The reports tool provides a global view of problem solving in a society of agents and is useful both as a debugging and an administrative tool. It allows a user to select a set of agents and request that they report the status of all their jobs to it. Next, the user can select an agent of interest and a job owned by that agent. (An agent owns a job if it is scheduled to perform the job or subpart at a root node in a task decomposition hierarchy for the job.) For the selection of agent and job, the reports tool generates the GANTT chart type graph 700 of FIG. 7 showing the decomposition 560 of the job, the allocation of its constituent subparts to different agents in the community, and the relevant states of the job and subparts. Other attributes of the jobs might also be shown on the chart, such as when each agent is scheduled to perform its part, their costs, the priority assigned to them by the agents, and the resources they require.;).

**5.**                                    *Conclusion*

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to El Hadji M Sall whose telephone number is 571-272-

4010. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-4010.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

El Hadji Sall
Patent Examiner
Art Unit: 2157

SALEH NAJJAR
PRIMARY EXAMINER